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TO ASSESS SLEEP DISTURBANCE AND INTOLERANCE OF UNCERTAINTY MEDIATED BY EMOTIONAL INTELLIGENCE AMONG YOUNG ADULTS DURING A PANDEMIC OUTBREAK

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ABSTRACT

*Covid-19 Pandemic has created a lot of uncertainty in young adults. Daily lifestyle has changed a lot because of this uncertain situation especially sleep pattern has been disturbed. Hence, this study aims to examine the Sleep disturbance (improper sleep pattern) and Intolerance of uncertainty mediated (viewing uncertainty as negative) by Emotional intelligence (having awareness and regulating of one's and others' emotions) among young adults during a pandemic outbreak. An online questionnaire, including socio-demographics, the Pittsburgh Sleep Quality Index (PSQI), Intolerance of Uncertainty Scale (IUS), and Emotional Intelligence Scale (EIS), was administered to young adults (n=200). There is a significant positive correlation between sleep disturbance and intolerance of uncertainty (.367**), a significant negative correlation between sleep disturbance and emotional intelligence (-.329**), and Intolerance of uncertainty and emotional intelligence is negatively correlated (-.450**). On mediational analysis is revealed that emotional intelligence is partially mediating between Sleep disturbance and Intolerance of uncertainty. On Chi-square, it was seen that there is an association between Sleep disturbance and domicile and person's tested, covid positive in the past 1 year. Emotional intelligence has an association with family type. Sleep disturbance and Intolerance to uncertainty can be improved by enhancing Emotional intelligence.*

KEYWORDS: *Covid-19 Pandemic, Young adults, Sleep disturbance, Intolerance to uncertainty, and Emotional intelligence.*

1.INTRODUCTION

On March 11, 2020, the World Health Organization (WHO) announced the outbreak of COVID-19 as a pandemic. Covid-19 is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is a respiratory illness. This pandemic has not only been restricted to respiratory illness but has caused a devastating impact on various aspects of life. Economies have seen a setback, hospital infrastructure has fallen short, education institutions have shut down, social stigma and discrimination have been widespread in the community, lockdown, social distancing, and quarantine have made people still more stressed, anxious, helpless, and hopeless (Roy2020). Most of the studies have shown the psychological impact of covid-19 on the Indian population (Chhetri 2021, Kumar 2021, Cold 2020, Varshney et al., 2020, Roy 2020).

This unexpected pandemic has created a sense of uncertainty, some can accept uncertainty whereas others can be vulnerable. Intolerance to uncertainty has been understood as an excessive tendency to find uncertain situations stressful and upsetting, to believe that unexpected events are negative and should be avoided, and to think that being uncertain about the future is unfair (Dugas et al., 2001). A study has shown that intolerance of uncertainty and mental wellbeing have a negative association. Intolerance of uncertainty and mental wellbeing have been mediated by rumination and fear of COVID-19 (Satici et al., 2020). Another study showed that the greater IOU was positively correlated with poorer adolescent sleep quality, and this relationship was mediated by worry (Lin et al., 2017). A study was conducted to show that the feeling of uncertainty intensifies affective reactions, that is uncertainty during an emotional event makes unpleasant events more unpleasant and pleasant events more pleasant (Bar-Anan et al., 2009).

Sleep disturbance has comorbidity with most mental illnesses. Sleep disturbances encompass disorders of initiating and maintaining sleep, disorders of excessive somnolence, disorders of sleep-wake schedule, and dysfunctions associated with sleep, sleep stages, or partial arousals (Cormier, R. E.1987). A study conducted on Chinese residents suggests that intolerance of uncertainty and perceived stress are critical factors in the relationship between COVID-19 uncertainty and sleep outcomes (Wu et all., 2021). A study has shown the ill effect of sleep deprivation on perceived emotional intelligence and constructive thinking skills (Killgore, 2008). Self-Reported Sleep Correlates with Prefrontal-Amygdala Functional Connectivity and Emotional Functioning (Killgore, 2013).

Emotional intelligence has been understood as the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to

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use this information to guide one's thinking and actions" (Mayer & Salovey,1989). Emotional intelligence has positive health benefits for both psychological and physical health. (Tsaousis, 2005).

2. METHOD

2.1 PARTICIPANTS

Total 209 responses were received through the google form. Among them, 5 responses were discarded due to age factors, and 4 responses were excluded as they have not given consent for participation. Of the initial responses, N= 200 responses were retained. Those who are within the age group of 18-25 years (Young adults), pursuing high school, pre-university, degree, master degree, MPhil, and Ph.D. in any stream of knowledge or are into jobs of any kind and internships and have been in a pandemic situation. Those who don't have access to the smartphone, are not Indian citizens, and those who do not know English were excluded from the study.

2.2 INSTRUMENTS

2.2.1 Sociodemographic Details:

A total of 200 participants' responses were considered for the study among which 125 responses were from females and 75 were from males. The average age of the participants was 23 years. Most of the responses were given by Postgraduate students (111) and Undergraduate students (82) few diploma studies and M.Phil. students have also responded. Few other socio-demographic details such as occupation, socio-economic status, family type, relationship status, and domicile were collected. Respondents were also asked if they (176=Yes and 24=No) or their family members (130=Yes and 70=No) had suffered from covid-19 infection.

2.2.2 Pittsburgh Sleep Quality Index (PSQI):

The PSQI is a 19-item self-report questionnaire designed to measure sleep quality and disturbances over 1 month. The first 4 items (fill-in-the-blank format) ask respondents about their usual bedtimes, wake times, sleep latency, and sleep duration. The remaining 14 items ask how often participants experienced certain symptoms within the past month (not during the past month, less than once a week, once or twice a week, 3 or more times a week). The 19 primary items yield a global sleep quality score, ranging from 0 (no difficulties) to 21 (severe sleep difficulties). The PSQI global score has good internal constancy (Cronbach's $\alpha = .83$) and equally good test-retest reliability ($r = .85$). The 7 component scores (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medications, and daytime dysfunction) have more moderate internal consistency.

2.2.3 Intolerance of Uncertainty Scale, Short Form (IUS-12; Carleton et al., 2007):

The short 12-item version of the IUS (Carleton et al.2007; Turkish version: Saricam et al. 2014) was developed to assess intolerance of uncertainty. The Turkish version of the IUS ($\alpha = .88$) is a two-factor scale that assesses prospective anxiety($\alpha = .84$) and inhibitory anxiety ($\alpha = .77$). Each item is scored on a 5-point scale ranging from 1 (not at all characteristic of me) to 5(entirely characteristic of me). Higher scores obtained from the scale indicate higher intolerance of uncertainty.

2.2.4 Emotional Intelligence Scale (EIS):

Emotional Intelligence Scale by Dr. Arun Kumar Singh and Dr. Shruthi Narain contains 31 items divided into 4 dimensions (understanding emotions, understanding motivation, empathy, and handling relations). Scoring is done separately for positive items (27) and negative items (4) using a scoring key, +1 is given to those responses which tailed with the answers in the scoring key, and 0 scores for those which don't tally. The reliability was found to be 0.86 alpha coefficients, which was significant at .01 level. This scale was correlated against the Emotional Intelligence Scale developed by Hyde, Pethe, and Dhar (2001). The concurrent validity was found to be 0.86, which was significant at .01 level.

2.3 PROCEDURE

Data was collected using google forms. Before collecting data, general instructions as to who can participate in the research, and some guidelines regarding the careful reading of questions, and honest responses were mentioned. Rights of Participants, confidentiality, and anonymity, potential risks, and discomforts of the study were informed to the participants. The researcher's identity and email addresses were shared in case of clarification of any doubt in the process of responding to the questionnaires. After the participants agreed to participate in the study by giving consent, they were asked to complete a survey packet that contained demographic questions, Pittsburgh Sleep Quality Index (PSQI), Intolerance of Uncertainty Scale (IUS), and Emotional Intelligence Scale (EIS).

2.4 DATA ANALYSIS

Correlational analysis was conducted to understand the relationship between Sleep disturbance, Level of intolerance to uncertainty, and emotional intelligence. To check if emotional intelligence acts as a mediator between sleep quality and level of intolerance to uncertainty a mediational analysis of Processv3.5 by Andrew F. Hayes was used in SPSS. Chi-Square test was conducted to find the association between Sociodemographic factors and sleep disturbance, Intolerance of uncertainty, and emotional intelligence.

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3. RESULTS

Table-1: Showing the Gender, the Total number of participants, Mean and Standard deviation.

	Gender	N	Mean	Std. Deviation
Sleep Disturbance	Female	125	5.42	3.368
	Male	75	4.76	3.101
Intolerance of uncertainty	Female	125	35.23	10.348
	Male	75	35.55	10.402
Emotional Intelligence	Female	125	23.54	4.326
	Male	75	22.64	4.988

The descriptive statistics shows that there were 125 female participants and 75 male participants in this study. The mean and standard deviation of Sleep disturbance of the female group is 5.42 (SD=3.368) and the male group is 4.76 (SD=3.101). the mean and standard deviation of intolerance of uncertainty among the female group is 35.23 (SD=10.348) and the male group is 35.55 (SD=10.402). The mean and standard deviation of emotional intelligence of the female group is 23.54 (SD=4.326) and the male group is 22.64 (SD=4.988).

Table-2: Showing the correlation between Sleep Disturbance, Intolerance of Uncertainty, and Emotional Intelligence.

		Sleep disturbance	Intolerance of uncertainty	Emotional Intelligence
Sleep disturbance	Pearson Correlation	1	.367**	-.329**
	Sig. (2-tailed)		.000	.000
Intolerance of uncertainty	Pearson Correlation			-.450**
	Sig. (2-tailed)			.000

**. Correlation is significant at the 0.01 level (2-tailed), N=200

All the three variables that are sleep disturbance, intolerance of uncertainty, and emotional intelligence have a significant relationship at 0.01 level of significance. The table shows that there is a significant positive correlation between sleep disturbance and intolerance of uncertainty (.367**). There is a significant negative correlation between sleep disturbance and emotional intelligence (-.329**). The relationship between intolerance of uncertainty and emotional intelligence is negatively correlated (-.450**).

Table- 3: Showing the results of mediation analysis relating to Emotional Intelligence (M) as a mediating factor between Sleep disturbance(X) and Intolerance to uncertainty (Y).

	Effect	se	t	P	LLCI	ULCI
Direct	.7732	.2054	3.7642	.0002	.3681	1.1783
Indirect	.3834	.1150	-	-	.1774	.6395
Total	1.1566	.2086	5.5437	.0000	.7452	1.5681

Note: se= Standard error, LLCI= Lower limit of class interval, ULCI= Upper limit of class interval.

In the indirect row, it can be noticed that the value of lower limit class interval (LLCI) and upper limit class interval (ULCI) i.e, .1774 and .6395 respectively. In which zero does not fall between these two values indicates that there is a significant relationship between Sleep disturbance and Intolerance of uncertainty via Emotional intelligence. Therefore, the effect value of direct with the indirect effect that is .7732 and .3834, by comparing this value it is inferred that indirect effect is reduced. Hence, emotional intelligence is partially mediating between Sleep disturbance and Intolerance of uncertainty.

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Table-4: Showing the association between Sleep Disturbance and Sociodemographic Factors (i.e., gender, family type, relationship status, domicile, tested covid and family member tested covid)

SLEEP DISTURBANCE					
Gender	**High**	**Low**	**Value**	**df**	**Significance**
Male	26 (13.0%)	49 (24.5%)	.411	1	.521
Female	49 (24.5%)	76 (38.0%)			
Family Type	**High**	**Low**			
Joint	11 (5.5%)	21 (10.5%)	.159	1	.690
Nuclear	64 (32.0%)	104 (52.0%)			
Relationship Status	**High**	**Low**			
In Relationship	14 (7.0%)	23 (11.5%)	.002	1	.962
Single	61 (30.5%)	102 (51.0%)			
Domicile	**High**	**Low**			
Rural	14 (7.0%)	51 (25.5%)	10.489	2	**.005**
Semi-Urban	24 (12.0%)	30 (15.0%)			
Urban	37 (18.5%)	44 (22.0%)			
Tested Covid-19	**High**	**Low**			
No	60 (30.0%)	114 (57.0%)	5.199	1	**.023**
Yes	15 (7.5%)	11 (5.5%)			
Family Member Tested Covid-19	**High**	**Low**			
No	43 (21.5%)	86 (43.0%)	2.692	1	.101
Yes	32 (16.0%)	39 (19.5%)			

An association was found between Sleep disturbance and Domicile (.005) and Person tested with covid-19 (.023). There is no association found between Sleep disturbance and gender (.521), family type(.690), relationship status (.962), and family member tested covid-19 (.101).

Table-5: Showing the association between Intolerance of Uncertainty and Sociodemographic Factors (i.e., gender, family type, relationship status, domicile, tested covid and family member tested covid)

INTOLERANCE OF UNCERTAINTY					
Gender	**High**	**Low**	**Value**	**df**	**Significance**
Male	38 (19.0%)	37 (18.5%)	.342	1	.559
Female	58 (29.0%)	67 (33.5%)			
Family Type	**High**	**Low**			
Joint	16 (8.0%)	16 (8.0%)	.061	1	.805
Nuclear	80 (40.0%)	88 (44.0%)			
Relationship Status	**High**	**Low**			
In Relationship	18 (9.0%)	19 (9.5%)	.008	1	.930
Single	78 (39.0%)	85 (42.5%)			
Domicile	**High**	**Low**			
Rural	29 (14.5%)	36 (18.0%)	.620	2	.733
Semi-Urban	28 (14.0%)	26 (13.0%)			
Urban	39 (19.5%)	42 (21.0%)			

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Tested Covid-19	**High**	**Low**			
No	84 (42.0%)	90 (45.0%)	0.41	1	.840
Yes	12 (6.0%)	14 (7.0%)			
Family Member Tested Covid-19	**High**	**Low**			
No	59 (29.5%)	70 (35.0%)	.746	1	.388
Yes	37 (18.5%)	34 (17.0%)			

Intolerance of uncertainty showed no association with gender (.559), family type(.805), relationship status (.930), domicile (.733), and Person tested with covid-19 (.840) and family members tested covid-19 (.388).

Table-6: Showing the association between Emotional Intelligence and Sociodemographic Factors (i.e., gender, family type, relationship status, domicile, tested covid and family member tested covid)

	EMOTIONAL INTELLIGENCE				
Gender	**High**	**Low**	**Value**	**df**	**Significance**
Male	33 (16.5%)	42 (21.0%)	1.728	1	.189
Female	67 (33.5%)	58 (29.0%)			
Family Type	**High**	**Low**			
Joint	21 (10.5%)	11 (5.5%)	3.720	1	**.054**
Nuclear	79 (39.5%)	89 (44.5%)			
Relationship Status	**High**	**Low**			
In Relationship	19 (9.5%)	18 (9.0%)	.033	1	.856
Single	81 (40.5%)	82 (41.0%)			
Domicile	**High**	**Low**			
Rural	40 (20.0%)	25 (12.5%)	5.622	2	.060
Semi-Urban	22 (11.0%)	32 (16.0%)			
Urban	38 (19.0%)	43 (21.5%)			
Tested Covid -19	**High**	**Low**			
No	89 (44.5%)	85 (42.5%)	.707	1	.400
Yes	11 (5.5%)	15 (7.5%)			
Family Member Tested Covid-19	**High**	**Low**			
No	69 (34.5%)	60 (30.0%)	1.769	1	.184
Yes	31 (15.5%)	40 (20.0%)			

An association was found between Emotional Intelligence and Family type (.054). There is no association found between Emotional Intelligence and gender (.189), relationship status (.856), domicile (.060) person tested with covid-19 (.400) and family member tested covid-19 (.184).

4. DISCUSSION

There is a significant correlation among all three variables i.e., sleep disturbance, intolerance of uncertainty, and Emotional intelligence.

H1 Stated as *"There is no correlation between Sleep disturbance and Intolerance of uncertainty"* is rejected as the results revealed that there is a significant positive correlation between sleep disturbance and intolerance of uncertainty (.367**). This indicates that persons with high intolerance of uncertainty will have high sleep disturbance and vice versa.

H2 Stated as *"There is no correlation between Sleep disturbance and Emotional Intelligence"* is rejected as the results show that there is a significant negative correlation between sleep disturbance and emotional intelligence (-.329**). This indicates that persons with high emotional intelligence have decreased sleep disturbance and vice versa.

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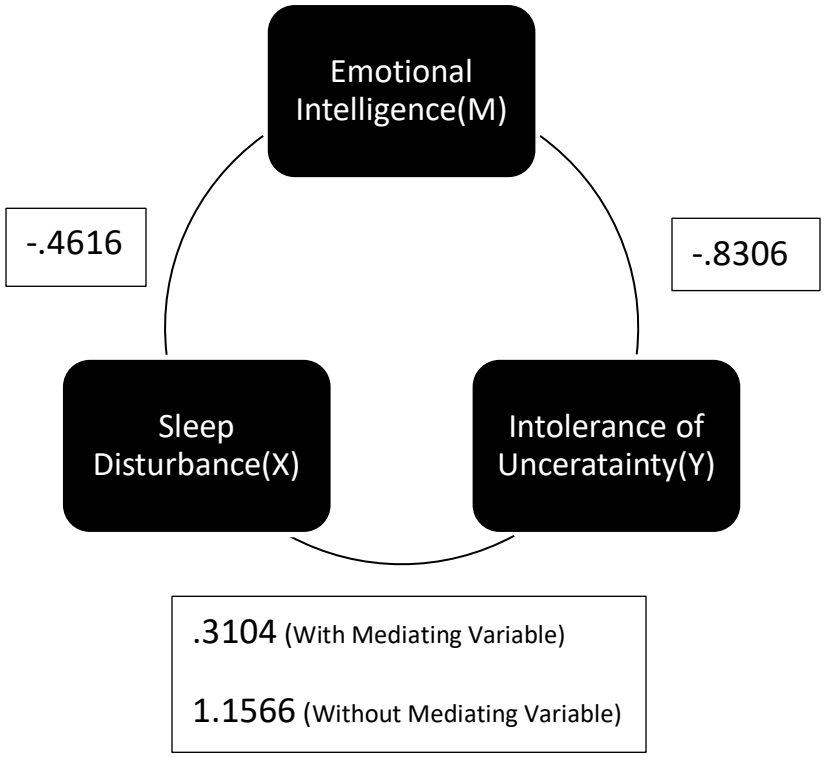
H3 Stated as *"There is no correlation between Intolerance of uncertainty and Emotional intelligence"* is rejected as the results show that there is a significant negative correlation (-.450**) between intolerance of uncertainty and emotional intelligence.

Table-7: Showing the summary of correlation results.

Sleep Disturbance	Intolerance of Uncertainty	Positive Correlation (.367**)
Sleep Disturbance	Emotional Intelligence	Negative Correlation (-.329**)
Intolerance of Uncertainty	Emotional Intelligence	Negative Correlation (-.450**)

H4 Stated as *"Emotional intelligence mediates between Quality of sleep and Intolerance of uncertainty"* is accepted. On mediational analysis, it is revealed that there is a significant relationship between Sleep disturbance and Intolerance of uncertainty via Emotional intelligence and emotional intelligence is partially mediating between Sleep disturbance and Intolerance of uncertainty.



Pictorial representation of mediational analysis.

On Chi-square, it was seen that there is an association between Sleep disturbance and domicile and person's tested, covid positive in the past 1 year. Emotional intelligence has an association with family type.

5. CONCLUSION

Sleep disturbance and Intolerance to uncertainty can be improved by enhancing Emotional intelligence.

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